1

2

3

4

OAc

OAc

5

O

OAc

OAc

6

O

OH

7

O

OH

8

O

OH

9

HO

Figure 1

FIGURE 2

FIGURE 3

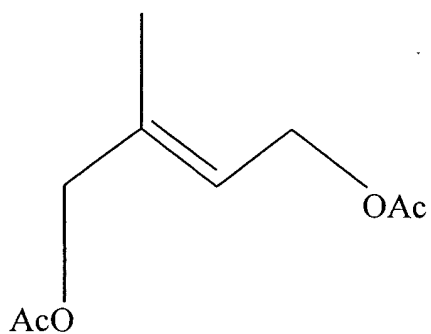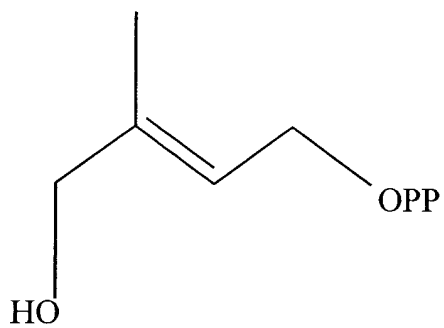EcgcpE :   ................MHNQAPIQRRKSTRIYVGNVPIGDG : 25
AtgcpE : MATGVLPAPVSGIKIPDSKVGFGKSMNLVRICDVRSLRSARRRVSVIRNSNQGSDLAELQPASEGSPLLVPRQKYCESLHKTVRRKTRTVMVGNVALGSE : 100

EcgcpE : APIAVQSMTNIRTTDVEATVNQIKAIERVGADIVRVSVPTMDAAEAF......KIIKQQVNVPLVADIHFDYRIAIKVAEYGVDCIRINPGNIGN....... : 114
AtgcpE : HPIRLQAMTSDIKDIITGTVDEVMRIADKGADIVRIIVQGKKEADACFEIKDKIVQLNYNIPLVADIHFAPTVALRVAEC.FDKIRVNPGNFADRRAQFE : 199

EcgcpE : .............EERIRMVDCARDKNIPIRIGVNAGSIEKDIQEKYGEPTPQALIESAMRHVDHLDRINEDQFKVSVKASDVFLAVESYRLIAKQ : 198
AtgcpE : TIDYTEDEYQKELQHIEQVFTPIVEKCKKYGRAMRIGTNHGSLSDRIMSYYGD.SPRGMVESAFEFARICRKLDWHNFVFSMKASNPVIMVQAYRLIVAE : 298

EcgcpE : I.....DQPLHLGITEAGGARSGAVKSAIGEGLLLSEGIGDTIRVSLAADPVEEIK.............................. : 249
AtgcpE : MYVHGWDYPLHLGVTEAGEGEDGRMKSAIGIGTLLQDGLGDTIRVSLTEPPEEEIDPCRRLANLGTKAAKLQQGAPFEEKHRHYFDFQRRTGDLPVQKEG : 398

EcgcpE : .... :   -
AtgcpE : EEVDYRNVLHRDGSVLMSISLDQLKAPELLYRSLATKLVVGMPFKDLATVDSILLRELPPVDDQVARLALKRLJDVSMGVIAPLSEOLTKPLPNAMVLVN : 498

EcgcpE : .... :   -
AtgcpE : LKELSGGAYKLLPEGTRLVVSLRGDEPYEELELILKNIDATMILHDVPFTEDKVSRVHAARRLFEFLSENSVNFPVIHHINFPTGIHRDELVIHAGTYAGG : 598.

EcgcpE : ..................VGFDILKSLRIRSRGINEIACPTCSRQEFDVIGTVNAIEQRLEDIITPMDVSIIGCVVNGPGEALVSTIGVTGGNK : 325
AtgcpE : LLVDGLGDGVMLEAPDQDFDFLRNTSFNLQGCRMRNTKTEYVSCPSCGRTLFDLQEISAEEREKTSHHPG.VSIAIMGCIVNGPGEMADADFGYVGGSP : 697

EcgcpE : .KSGLYEDG.VRKDREDNNDMIDQEARIRAKASQLDEARRIDVQQVEK : 372
AtgcpE : GKIDLYVGKTIVKRGRAMTEATDADLIKEHG......RMVDPPVADE : 740

Figure 4

pZL1 (135H1):

```
...[SalI]aaaatcg(...)gaaaaATGGCGACTGGAGTATTGCCAGCTCCGGTTTCTGGGATCAAG
                          M  A  T  G  V  L  P  A  P  V  S  G  I  K
ATACCGGATTCGAAAGTCGGGTTTGGTAAAAGCATGAATCTTGTGAGAATTTGTGATGTTAGGAGTCTA
 I  P  D  S  K  V  G  F  G  K  S  M  N  L  V  R  I  C  D  V  R  S  L
Bg lII
AGATCTGCT(...)GATGAGTAGatttc(...)ataaaagt[NotI][XbaI][BamHI][HindIII][SphI]...
 R  S  A  (...) D  E  *
```

pQE30:

```
...  (...)  (...)                                                    G  S
                                                                     BamHI ▶  SphI
```

pQE-AGH:

```
          BamHI/BglII                                                        SphI
...  (...)  GATCTGCT(...)GATGAGTAGatttc(...)...
      R  G  S            S  A  (...) D  E  *
```

Figure 5